



David J. Cushing

T 202-663-7925
dcushing@sughrue.com

December 12, 2001

BOX PCT

Commissioner for Patents
Washington, D.C. 20231

PCT/FR00/01686
-filed June 19, 2000

www.sughrue.com

Re: Application of Herve SAINT
AN AIRCRAFT FLYING AT HIGH ALTITUDE TO SERVE AS A RADIO
RELAY, AND A METHOD OF GETTING THE AIRCRAFT ONTO STATION
Assignee: ALCATEL
Our Ref: Q67618

Dear Sir:

The following documents and fees are submitted herewith in connection with the above application for the purpose of entering the National stage under 35 U.S.C. § 371 and in accordance with Chapter I of the Patent Cooperation Treaty:

- ☒ an executed Declaration and Power of Attorney.
- ☒ an English translation of the International Application.
- ☒ 2 sheets of drawings.
- ☐ an English translation of Article 19 claim amendments.
- ☐ an English translation of Article 34 amendments (annexes to the IPER).
- ☒ an executed Assignment and PTO 1595 form.
- ☒ a Form PTO-1449 listing the ISR references, and a complete copy of each reference, along with the corresponding foreign search report
- ☒ a Preliminary Amendment

It is assumed that copies of the International Application, the International Search Report, the International Preliminary Examination Report, and any Articles 19 and 34 amendments as required by § 371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned can easily provide them upon request.

10/009573
JC18 Rev'd PCT/FR 12 DEC 2001
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213
T 202.293.7060
F 202.293.7860

1010 El Camino Real
Menlo Park, CA 94025-4345
T 650.325.5800
F 650.325.6606

Toei Nishi Shimbashi Bldg. 4F
13-5 Nishi Shimbashi 1-Chome
Minato-Ku, Tokyo 105-0003
Japan
T 03.3503.3760
F 03.3503.3756

10/009573



Sughrue

SUGHRUE MION, PLLC

Commissioner for Patents

Washington, D.C. 20231

Page 2

Attorney Docket Q67618

December 12, 2001

**PLEASE SEE THE ATTACHED PRELIMINARY AMENDMENT BEFORE
CALCULATING THE FEE**

The Government filing fee is calculated as follows:

Total claims	<u>8</u>	-	20	=		x	\$18.00	=	\$0.00
Independent claims	<u>2</u>	-	3	=		x	\$84.00	=	\$0.00
Base Fee									\$890.00

TOTAL FILING FEE	\$890.00
Recordation of Assignment	\$ 40.00
TOTAL FEE	\$930.00

Checks for the statutory filing fee of \$890.00 and Assignment recordation fee of \$40.00 are attached. You are also directed and authorized to charge or credit any difference or overpayment to Deposit Account No. 19-4880. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.492 which may be required during the entire pendency of the application to Deposit Account No. 19-4880. A duplicate copy of this transmittal letter is attached.

Priority is claimed from:

<u>Country</u>	<u>Application No</u>	<u>Filing Date</u>
France	9907812	June 21, 1999

Respectfully submitted,

David J. Cushing
Registration No. 28,703

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Date: December 12, 2001

FOETEF E35000T

PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of PCT/FR00/01686

Herve SAINCT Attorney Docket Q67618

Appln. No.: Not Assigned

Confirmation No.: Not Assigned Group Art Unit: Not Assigned

Filed: December 12, 2001 Examiner: Not Assigned

For: AN AIRCRAFT FLYING AT HIGH ALTITUDE TO SERVE AS A RADIO RELAY,
AND A METHOD OF GETTING THE AIRCRAFT ONTO STATION

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please enter the following amended claims:

3. (Amended) An aircraft of the airplane or glider type according to claim 1,
characterized in that it includes at least one solar generator (5) cooled by convection with the
surrounding air at said high altitude.

4. (Amended) An aircraft of the airplane or glider type according to any claim 1,
characterized in that it includes at least one storage battery (7) having superconductive
components.

5. (Amended)A method of getting an aircraft of the airplane or glider type as specified in claim 1 onto station, the method being characterized by the following steps:

- on the ground, said aircraft (1) is secured to an independent transporter (3);
- said transporter (3) takes said aircraft (1) to a high altitude at which it is to operate making use solely of propulsion means of said transporter (3);
- said transporter (3) releases said aircraft (1) at the altitude (H) and at least approximately at the intended location of its operating station; and
- if necessary, said aircraft (1) uses its own propulsion means (2) to put itself finally on station and take up its proper orientation.

7. (Amended)A method of replacing a radio relay in a telecommunications network comprising a plurality of radio relays, the method being characterized in that said radio relay (10) is replaced by an aircraft (1) of the airplane or glider type as specified in claim 1, and provided with transceiver means (15) for radio waves (16, 17), said aircraft (1) being taken to an altitude and a position such that said transceiver means (15) lies in the same direction relative to at least one user (11, 12) of said telecommunications network (RT) as said replaced relay (10), with operation between said transceiver means (15) and said user (11, 12) being performed via an existing interface.

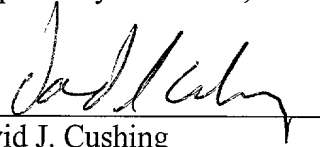
8. (Amended)A telecommunications network comprising a plurality of radio relays, characterized in that it includes at least one radio relay carried by an aircraft (1) of the airplane or glider type as specified in claim 1, and put onto station at high altitude.

Preliminary Amendment
Attorney Docket Q67618

REMARKS

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,



David J. Cushing
Registration No. 28,703

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Date: December 12, 2001

FILED

Preliminary Amendment
Attorney Docket Q67618

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

3. (Amended) An aircraft of the airplane or glider type according to claim 1 ~~or claim~~
2, characterized in that it includes at least one solar generator (5) cooled by convection with the
surrounding air at said high altitude.

4. ~~(Amended)~~ An aircraft of the airplane or glider type according to any one of ~~claims 1 to 3~~claim 1, characterized in that it includes at least one storage battery (7) having superconductive components.

5. (Amended)A method of getting an aircraft of the airplane or glider type as specified in ~~any one of claims 1 to 4~~claim 1 onto station, the method being characterized by the following steps:

- on the ground, said aircraft (1) is secured to an independent transporter (3);
- said transporter (3) takes said aircraft (1) to a high altitude at which it is to operate making use solely of propulsion means of said transporter (3);
- said transporter (3) releases said aircraft (1) at the altitude (H) and at least approximately at the intended location of its operating station; and
- if necessary, said aircraft (1) uses its own propulsion means (2) to put itself finally on station and take up its proper orientation.

7. (Amended) A method of replacing a radio relay in a telecommunications network comprising a plurality of radio relays, the method being characterized in that said radio relay (10) is replaced by an aircraft (1) of the airplane or glider type as specified in ~~any one of claims 1 to 4,~~ claim 1, and provided with transceiver means (15) for radio waves (16, 17), said aircraft (1) being taken to an altitude and a position such that said transceiver means (15) lies in the same direction relative to at least one user (11, 12) of said telecommunications network (RT) as said replaced relay (10), with operation between said transceiver means (15) and said user (11, 12) being performed via an existing interface.

8. (Amended) A telecommunications network comprising a plurality of radio relays, characterized in that it includes at least one radio relay carried by an aircraft (1) of the airplane or glider type as specified in ~~any one of claims 1 to 4,~~ claim 1, and put onto station at high altitude.

AN AIRCRAFT FLYING AT HIGH ALTITUDE TO SERVE AS A RADIO
RELAY, AND A METHOD OF GETTING THE AIRCRAFT ONTO STATION

The present invention relates to an aircraft flying
at high altitude, and to a method of getting the aircraft
5 onto station, and also to applications thereof.

In the context of the present invention, "high
altitude" means an altitude which is higher both than the
altitude of civilian air links and the altitude of
earth's cloud ceiling. The atmosphere situated at such
10 high altitude is referred to below as the "high"
atmosphere.

Over the last few years numerous studies and
proposals, usually of a theoretical nature, have been
made concerning the design and use of an aircraft, e.g.
15 an airplane, a balloon, or a motorized parachute, for the
purpose of going from the ground into the high
atmosphere, e.g. into the stratosphere, and remaining
there permanently, in order to perform specific
processing or operations. By way of illustration,
20 mention can be made of the proposals described in
documents WO 96/12643 and WO 95/32893.

Very numerous operations can be envisaged such as
observing the earth, telecommunications, scientific
research, i.e. operations which are usually performed by
25 satellites. Unfortunately, satellites are extremely
expensive and can be considered only for major users,
generally States or collections of States.

In contrast, an aircraft flying at high altitude
could be affordable for small territorial entities, such
30 as local or regional government organizations or
companies of smaller size. Such an aircraft flying at
high altitude does not require a launch rocket and,
furthermore, unlike a satellite, since it remains in the
atmosphere it can make use of components that are not
35 qualified for use in space. This explains why such an
aircraft is economically of interest.

10009573-121301
102121-121301

Nevertheless, in spite of that, the high altitude aircraft solutions that have been envisaged or proposed are unfeasible, both economically and even technically. In particular:

5 - because of their high weight, and thus significant
weight/power ratio, the aircraft that have been proposed
are generally too heavy to remain at high altitude on a
permanent basis, in particular, the energy supplied by
batteries and possibly by solar cells often remains
10 inadequate;

- in addition, the energy storage capacities proposed are generally insufficient to provide power over night; and

- other energy sources, such as transmitting energy
15 by microwaves from the ground, are too complex and
expensive and they are also harmful for the environment.

An object of the present invention is to remedy those drawbacks. The invention provides a low cost aircraft suitable for being used on station in the high atmosphere.

To this end, according to the invention, said aircraft is remarkable in that it includes propulsion means enabling said aircraft to maintain itself, to move itself, and to orient itself solely at high altitude.

25 Thus, since by virtue of the invention said aircraft
does not have any generally very heavy, bulky, and
expensive propulsion means suitable for taking it up to
its high altitude station in the high atmosphere, its
weight is very low, as is its cost, thereby enabling the
30 above-specified drawbacks to be remedied.

Furthermore, using its own propulsion means, said aircraft, e.g. an airplane or a glider, can perform the movements and steering necessary to enable it to operate and to keep on station. Since such movements are generally very small, said aircraft does not require a great deal of energy to implement them, thus also making

it possible to reduce its cost and to relax energy constraints.

It should also be observed that by eliminating in this way the constraints of taking the aircraft to
5 altitude through higher pressures and temperatures, it is possible to optimize its characteristics specifically for operating on station in the high atmosphere, and in particular it is possible to opt for technical solutions that would be unsuitable for performing the stage of
10 getting up to station, e.g. in terms of aerodynamics, operating temperature, energy storage, structural strength, etc.

To this end, the present invention proposes various technical characteristics serving in particular to reduce
15 energy constraints and to optimize the operation of the aircraft. It should be observed that all of these technical characteristics specified below are specifically intended for operation in the high atmosphere and are not usable in particular on the ground
20 or while getting up to station.

In a first particularly advantageous embodiment, said aircraft has at least one plasma thruster which operates on the basis of a plasma created from the surrounding air of the high atmosphere. Because of the
25 characteristics of the high atmosphere, the plasma can be generated without any feedstock such as xenon, and without any bulky and heavy supply unit comprising tanks, circuits, and valves. Thus, the propulsion means are very simple and can operate without limit on duration
30 since there is no fear of running out of a feedstock.

Furthermore, and advantageously, said aircraft includes at least one solar generator which is cooled by convection by means of the surrounding air in said high atmosphere.

35 Thus, said solar generator or its solar cells can operate at a temperature which is much lower than ambient temperature on the ground or the operating temperatures

1000997-1323

that are generally encountered in space using artificial satellites, thereby obtaining much better efficiency.

In addition, in an advantageous embodiment, said aircraft includes at least one storage battery having
5 superconducting components. Because of the convective environment, at a temperature close to -100°C , much better yield is obtained than can be obtained with ordinary batteries.

The present invention also provides a method of
10 putting the above-specified aircraft onto station. To this end, according to the invention, said method is remarkable in that:

- on the ground, said aircraft is secured to an independent transporter;
- 15 - said transporter takes said aircraft up to a high altitude at which it is to operate making use solely of propulsion means of said transporter;
- said transporter releases said aircraft at the altitude and at least approximately at the intended
20 location of its operating station; and
- if necessary, said aircraft uses its own propulsion means to put itself finally on station and take up its proper orientation.

Preferably, said transporter comprises at least one
25 balloon capable of rising to high altitude. Such a balloon, of usual type, presents very high carrying capacity and can therefore take the aircraft to the desired location without difficulty, at low cost, and with sufficient accuracy. In addition, the launch
30 nacelle of the balloon can be recovered and reused. Furthermore, the balloon rises sufficiently slowly to avoid imposing aerodynamic and/or mechanical stresses on the aircraft (unlike a booster rocket or an airplane, for example).

35 The aircraft of the invention can be used in a very large number of applications, such as terrestrial observation, telecommunications, scientific research,

10009573-121201

weather observation, etc. . . . Nevertheless, the preferred applications of the invention relate to a telecommunications network comprising a plurality of radio relays situated on the ground and/or in space.

5 To this end, a first application concerns a method of replacing a relay in such a telecommunications network.

According to the invention, said method is remarkable in that said radio relay is replaced by an aircraft as specified above, and provided with transceiver means for radio waves, said aircraft being taken to an altitude and a position such that said transceiver means lies in the same direction relative to at least one user of said telecommunications network as said replaced relay, with operation between said transceiver means and said user being performed via an existing interface. The user then has no need to modify either the interface or even the pointing of the antenna.

This makes it possible to replace radio relay networks based on the ground or in space easily, and in addition to do so without modifying the interfaces of user terminals, which is particularly advantageous particularly in terms of cost.

A second application concerns a network including at least one radio relay disposed on an aircraft as specified above. This characteristic makes it possible to extend a preexisting network or to create a new network entirely or in part out of relays of this type.

The figures of the accompanying drawing show clearly how the invention can be implemented. In these figures, identical references designate elements that are similar.

Figure 1 shows the various steps in getting an aircraft of the invention onto station.

Figure 2 shows a preferred application of an aircraft of the invention.

The aircraft 1 of the invention is put onto station by implementing four successive stages P1 to P4 as shown

in Figure 1 from left to right, using a specific transporter, in this case a balloon 3 of usual type. The aircraft 1 is put into station in the high atmosphere, in particular the stratosphere, at an altitude H above the ground S.

According to the invention, said aircraft 1, e.g. an airplane, includes propulsion means 2 that are capable of keeping, of moving, and of steering the aircraft solely in said high atmosphere. By way of example, these propulsion means can comprise a plasma thruster 2 which operates on the basis of a plasma created from the surrounding air in the high atmosphere. Said propulsion means could also be of the propeller type.

Because of the low pressure that exists in the stratosphere or the high atmosphere, said plasma can be created without using any feedstock, such as xenon, and without it being necessary for said aircraft 1 to carry a supply unit containing tanks, circuits, and valves, which would be bulky, heavy, and expensive. Such a thruster 2 is capable of delivering enough power to move and to steer the aircraft 1 in the intended applications as specified above. Furthermore, because of the above-mentioned characteristics, the thruster 2 is very simple and can operate indefinitely, since it requires no feedstock for the purpose of creating a plasma.

The aircraft 1 of the invention further comprises, by way of example, a solar generator 5 having solar cells 6 and cooled by convection with the surrounding air in the stratosphere which is generally at a temperature of about -100°C . Because of this temperature, the yield of said solar generator 5 is improved.

Furthermore, according to the invention, the temperature characteristics of the materials supporting or adjacent to the solar cells 6 are adjusted in such a manner as to select the most efficient operating temperature. The solar generator 5 uses convective cooling, unlike generators that exist on the ground or in

space, and is thus adapted to the specific environment that exists in the stratosphere or the high atmosphere.

It should also be observed that:

- the connection architecture of the solar cells 6 (series connection, parallel connection, etc. ...) is selected as a function of the desired yields; and
- the arrangement of the solar cells 6 on the outside surface of the aircraft 1 is selected as a function of the intended orientation of the aircraft 1.

Furthermore, said aircraft 1 has at least one battery 7, e.g. built using superconducting components that are particularly suited to the temperature conditions found in the high atmosphere. It should be observed that at the intended operating altitude H, in a convective environment whose temperature is close to -100°C, keeping for example a torus of superconducting material at its operating temperature requires no more than a simple single-stage cryogenic machine that consumes little power.

Thus, by means of the above-specified elements 2, 5, and 7, which are particularly adapted to the operating conditions at high altitude, existing energy constraints are slackened to a considerable extent, thereby enabling the aircraft 1 to remain permanently in the high atmosphere and to operate over a long period relying solely on its on-board means.

As mentioned above, the simplified design of the propulsion means 2 of the aircraft 1 is due in particular to using a specific transporter 3, e.g. a balloon or a rocket, for getting said aircraft 1 onto station. Since said aircraft 1 does not need to be designed to be capable of flying from the ground up to the altitude H, it can be aerodynamically optimized for its intended operating altitude H.

According to the invention, getting the aircraft onto station comprises:

- a stage P1 during which the aircraft 1 is fixed on the ground S to a nacelle 8 of said balloon 3, e.g. a stratospheric type balloon;

5 - a stage P2 in which said balloon 3 is inflated and then lifts the aircraft 1 into the atmosphere;

- a stage P3 in which said balloon 3 releases the aircraft 1 at the desired altitude H; and

10 - a stage P4 in which, if necessary, the aircraft 1 moves finally onto station and takes up the desired orientation by making use solely of said propulsion means 2, while the nacelle 8 of the balloon falls back to the ground S on a parachute 9 and can be recovered.

15 The aircraft 1 of the invention can be used in numerous applications. In particular, as shown in Figure 2, it can be used to replace a radio relay 10, specifically a satellite relay, in a telecommunications network RT that comprises a plurality of radio relays based in space and/or on the ground.

20 As can be seen in Figure 2, said satellite relay 10 can communicate with users 11 and 12 of said telecommunications network RT, e.g. radio or television or mobile telephone receivers, respectively via the radio links 13 and 14 represented by dashed lines.

25 According to the invention, in order to replace said satellite relay 10, the aircraft 1 which is provided with radio wave transceiver means 15 is taken to an altitude and a position such that it lies in the same direction relative to said users 11 and 12 as said satellite relay 10 that is to be replaced, thereby making it possible to
30 avoid any need to modify the pointing of user antennas. When such replacement is performed, said radio wave transceiver means 15 can communicate with the users 11 and 12 in the usual way, without changing the interfaces of the users 11 and 12, and as shown by respective radio
35 links 16 and 17, said users 11 and 12 can communicate with each other, as represented by a radio link 18.

1008937-131304

Naturally, instead of communicating directly with terminal users, said means 15 could equally will communicate with other relays (not shown) in the telecommunications network RT. Nevertheless, in
5 accordance with the invention, in all implementations, the same interface is maintained (in frequency, protocol, power, ...) with existing terminal users.

It should be observed that instead of replacing a satellite relay 10, the aircraft 1 provided with the means 15 could naturally equally well be used in the context of the present invention to replace a relay situated on the ground.

Furthermore, since the aircraft 1 is relatively close to users (a few tens of kilometers) it can easily
15 transmit with effective isotropic radiated power (EIRP) that is identical to that of a replaced relay.

It should be observed that the energy needed to obtain such power is much less, for example, than the energy needed to obtain the same power from a
20 geostationary satellite or from a satellite in low earth orbit (LEO).

Such an aircraft 1 thus makes it possible to combine the advantages of ground networks as enjoyed in regions which are already fitted therewith (richness, good
25 matching, flexibility, ...) with the advantages of satellites as enjoyed in regions which are not equipped with ground networks (instantaneous deployment without ground infrastructure).

According to the invention, said aircraft 1 provided
30 with said radio wave transceiver means 15 can also be used to extend a preexisting telecommunications network (not shown) or to enable a new telecommunications network to be created in full or in part using a plurality of such aircraft 1.

CLAIMS

- 1/ An aircraft of the airplane or glider type,
characterized in that it includes propulsion means (2)
enabling said aircraft (1) to maintain itself, to move
5 itself, and to orient itself solely at high altitude.
- 2/ An aircraft of the airplane or glider type according
to claim 1, characterized in that said propulsion means
(2) comprise at least one plasma thruster which operates
10 using plasma created from the surrounding air at said
high altitude.
- 3/ An aircraft of the airplane or glider type according
to claim 1 or claim 2, characterized in that it includes
15 at least one solar generator (5) cooled by convection
with the surrounding air at said high altitude.
- 4/ An aircraft of the airplane or glider type according
to any one of claims 1 to 3, characterized in that it
20 includes at least one storage battery (7) having
superconductive components.
- 5/ A method of getting an aircraft of the airplane or
glider type as specified in any one of claims 1 to 4 onto
25 station, the method being characterized by the following
steps:
- on the ground, said aircraft (1) is secured to an
independent transporter (3);
 - said transporter (3) takes said aircraft (1) to a
30 high altitude at which it is to operate making use solely
of propulsion means of said transporter (3);
 - said transporter (3) releases said aircraft (1) at
the altitude (H) and at least approximately at the
intended location of its operating station; and
 - 35 - if necessary, said aircraft (1) uses its own
propulsion means (2) to put itself finally on station and
take up its proper orientation.

6/ A method according to claim 5, characterized in that said transporter (3) comprises at least one balloon (3) suitable for rising to high altitude.

5

7/ A method of replacing a radio relay in a telecommunications network comprising a plurality of radio relays, the method being characterized in that said radio relay (10) is replaced by an aircraft (1) of the airplane or glider type as specified in any one of claims 1 to 4, and provided with transceiver means (15) for radio waves (16, 17), said aircraft (1) being taken to an altitude and a position such that said transceiver means (15) lies in the same direction relative to at least one user (11, 12) of said telecommunications network (RT) as said replaced relay (10), with operation between said transceiver means (15) and said user (11, 12) being performed via an existing interface.

10

15

20

8/ A telecommunications network comprising a plurality of radio relays, characterized in that it includes at least one radio relay carried by an aircraft (1) of the airplane or glider type as specified in any one of claims 1 to 4, and put onto station at high altitude.

1000953-13444

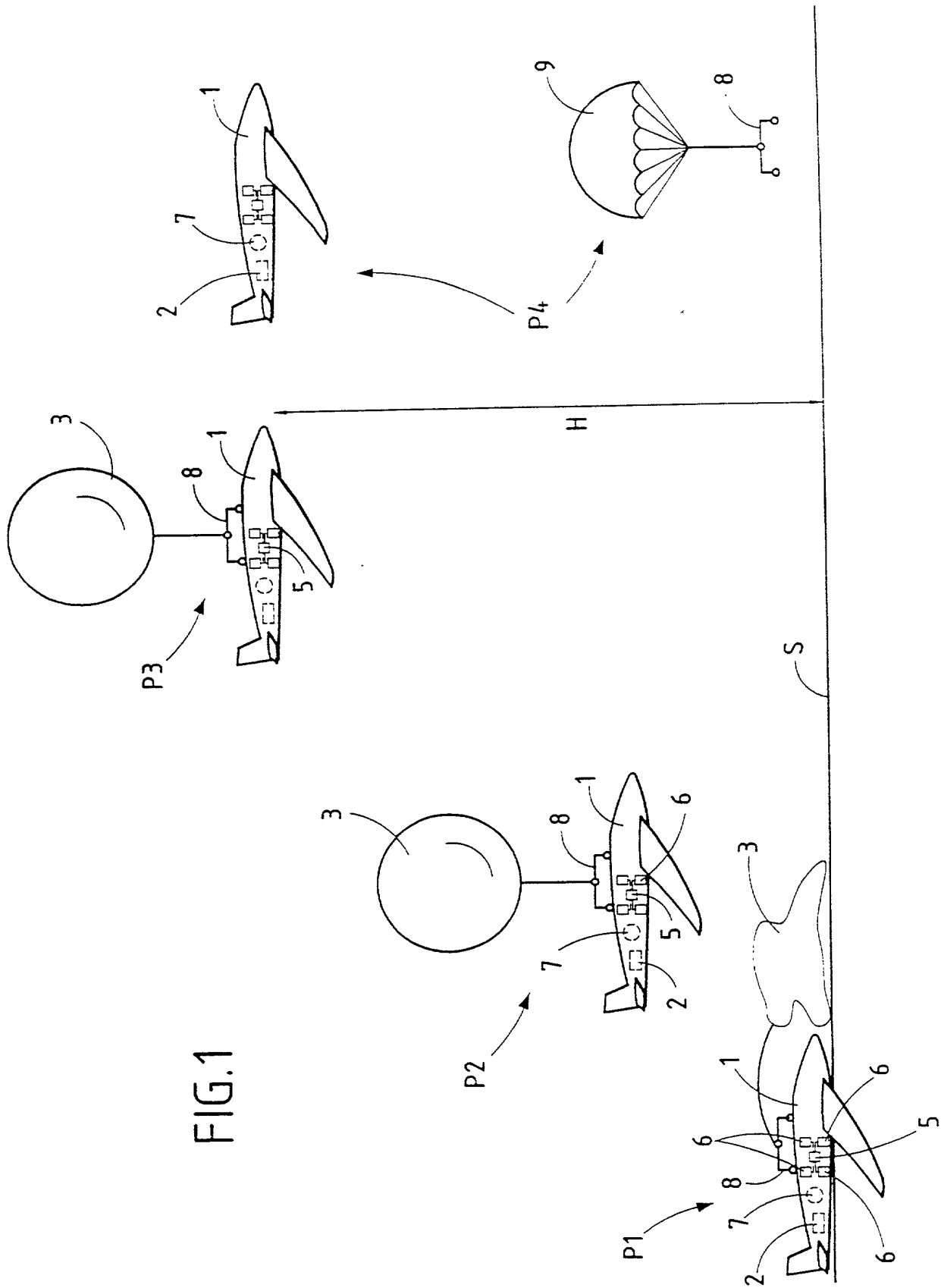
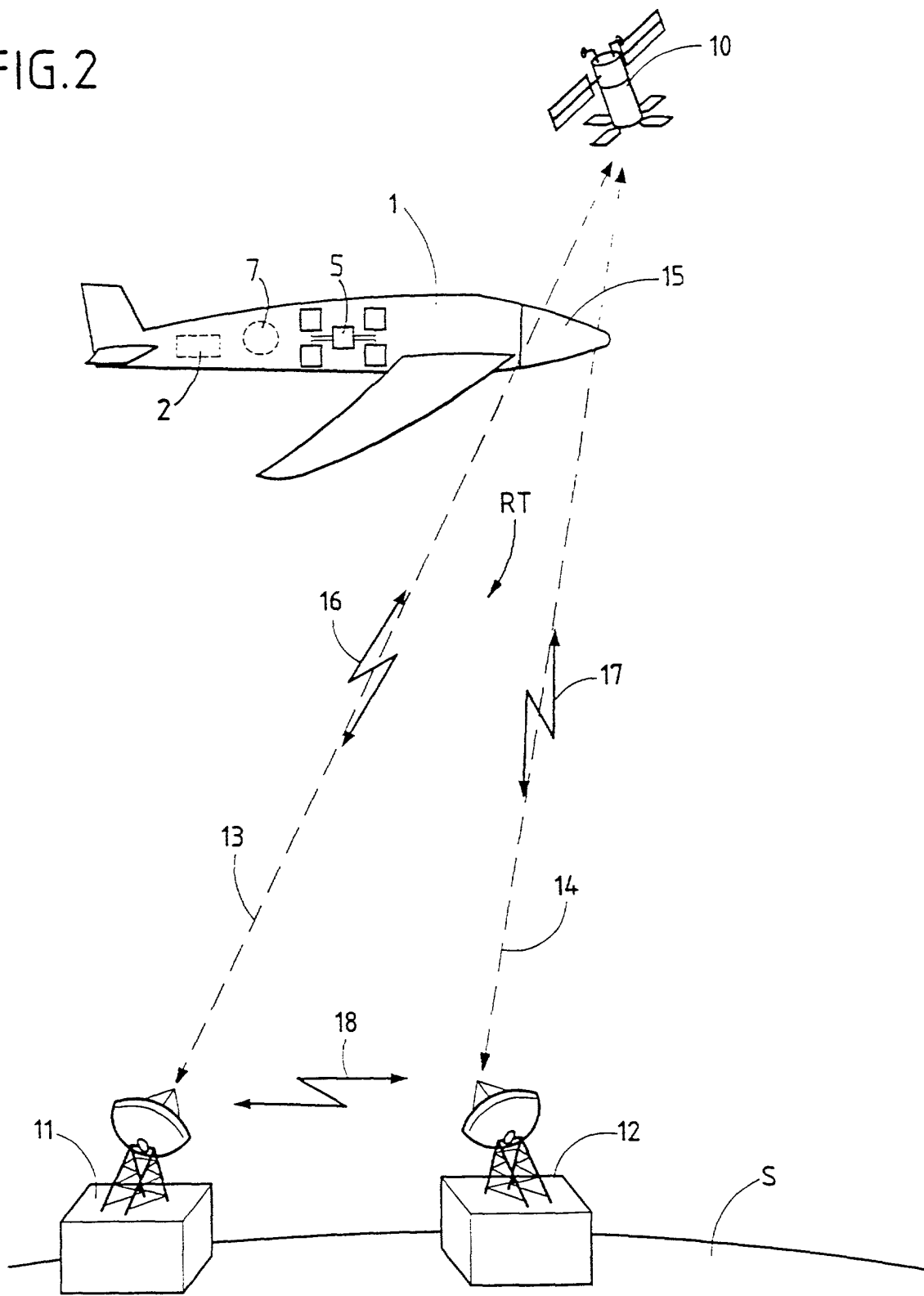


FIG.2



Declaration and Power of Attorney for Patent Application

Déclaration et Pouvoirs pour Demande de Brevet

French Language Declaration

En tant que l'inventeur nommé ci-après, je déclare par le présent acte que:

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention de la description identifiée par le numéro de référence

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises.

Je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations.

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § 119(a)-(d) ou § 365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, § 365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous et, j'ai aussi indiqué ci-dessous toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à propos de laquelle une priorité est revendiquée.

Prior foreign application(s) for which priority is claimed

Demande(s) de brevet étrangère(s) antérieure(s) dont la priorité est revendiquée

(Number) (Numéro)	(Country) (Pays)	(Day/Month/Year Filed) (Jour/Mois/Année de dépôt)
99 07 812	FRANCE	21 JUNE 1999

Prior foreign applications for which priority is not claimed

Demande(s) de brevet étrangères antérieure(s) dont la priorité n'est pas revendiquée

(Number) (Numéro)	(Country) (Pays)	(Day/Month/Year Filed) (Jour/Mois/Année de dépôt)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention in the specification identified by Docket No.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below, and have also identified below any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

French Language Declaration

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Application No.)
(No de demande)

(Filing Date)
(Date de dépôt)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, § 365(c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des Etats-Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application No.)
(N0 de demande)

(Filing Date)
(Date de dépôt)

(Status)(patented, pending, abandoned)
(Statut)(breveté, en cours d'examen, abandonné)

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

French Language Declaration

POUVOIRS: En tant que l'inventeur cité, je désigne par la présente l'(les) avocat(s) et/ou agent(s) suivant(s) pour qu'ils poursuive(nt) la procédure de cette demande de brevet et traite(nt) toute affaire s'y rapportant avec l'Office des brevets et des marques: (mentionner le nom et le numéro d'enregistrement).

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

30 John H. Mion, Reg. No. 18,879; Thomas J. Macpeak, Reg. No. 19,292; Robert J. Seas, Jr., Reg. No. 21,092; Darryl Mexic, Reg. No. 23,063; Robert V. Sloan, Reg. No. 22,775; Peter D. Olexy, Reg. No. 24,513; J. Frank Osha, Reg. No. 24,625; Waddell A. Biggart, Reg. No. 24,861; Louis Gubinsky, Reg. No. 24,835; Neil B. Siegel, Reg. No. 25,200; David J. Cushing, Reg. No. 28,703; John R. Inge, Reg. No. 26,916; Joseph J. Ruch, Jr., Reg. No. 26,577; Sheldon I. Landsman, Reg. No. 25,430; Richard C. Turner, Reg. No. 29,710; Howard L. Bernstein, Reg. No. 25,665; Alan J. Kasper, Reg. No. 25,426; Kenneth J. Burchfiel, Reg. No. 31,333; Gordon Kit, Reg. No. 30,764; Susan J. Mack, Reg. No. 30,951; Frank L. Bernstein, Reg. No. 31,484; Mark Boland, Reg. No. 32,197; William H. Mandir, Reg. No. 32,156; Scott M. Daniels, Reg. No. 32,562; Brian W. Hannon, Reg. No. 32,778; Abraham J. Rosner, Reg. No. 33,276; Bruce E. Kramer, Reg. No. 33,725; Paul F. Neils, Reg. No. 33,102; and Brett S. Sylvester, Reg. No. 32,765; and Robert M. Masters, Reg. No. 35,603.

Adresser toute correspondance à:

Send Correspondence to:
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W., Suite 800
Washington, D.C. 20037-3213

Nom complet de l'unique ou premier inventeur		Full name of sole or first inventor (First Middle Last) Hervé SAINCT	
Signature de l'inventeur	Date	Inventor's signature	Date 22.11.01
Domicile		Residence 06110 LE CANNET, FRANCE FRX	
Nationalité		Citizenship French	
Adresse postale		Post Office Address 271, avenue du Général de Gaulle 06110 LE CANNET, FRANCE	
Nom complet du second co-inventeur, le cas échéant		Full name of second joint inventor, if any (First Middle Last)	
Signature du second inventeur	Date	Second inventor's signature	Date
Domicile		Residence	
Nationalité		Citizenship	
Adresse postale		Post Office Address	

(Fournir les mêmes renseignements et la signature de tout co-inventeur supplémentaire.)

(Supply similar information and signature for third and subsequent joint inventors.)